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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,151	09/25/2003	William E. Wall	A-8839	4560

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SCIENTIFIC-ATLANTA, INC.  
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EXAMINER
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LUONG, ALAN H

ART UNIT	PAPER NUMBER
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2623

NOTIFICATION DATE	DELIVERY MODE
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05/15/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/671,151	WALL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ALAN LUONG	2623	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

Art unit is changed into 2623

#### ***Response to Amendment***

This Office Action is responsive to the Amendment filed on 03/05/2008.

Applicant filled Terminal Disclaimer and is received on March, 5, 2008. Double

Patenting rejection is withdrawn

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **1-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,190,901 issued to Farmer et al. (Hereinafter Farmer); in view of US Patent No. 5,481,542 issued to Logston et al (Hereinafter Logston).

**Regarding to claim 1:** Farmer discloses a fiber-to-the-home (FTTH) system, comprising:

at least one digital home communications terminal (DHCT) for receiving forward signals (" In conventional FTTH system, a downstream RF path... for any Set Top Terminals ... ", see col.2, lines 42-48) and for transmitting reverse RF signals ( "...set

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top terminals may employ RF carriers to transmit upstream information” . **See Farmer col.3, lines 9-11).**

Farmer discloses a single wire return device (SWRD) (“...a portion of the return path may be housed in a subscriber optical interface” **please see col. 3, lines 12-14)**( a portion of Optical interface 140 includes RF Diplexer 507 with high pass 517 and low pass 519A filter, Demodulation circuitry includes A/D converter 509, Frequency detector 521, PLL 523 for generating carrier frequency  $f_c$  as local oscillator 526 which is phase shift 90 degree before feed into mixer circuit 528A, 528B, output data from these mixers pass through data scaler 539, multiplexer 529 and data conditioner 407 ; **see Fig. 6)** for receiving the reverse RF signals (**please see Fig. 6, col. 17 line 66 to col.18 line 8**), demodulating the reverse RF signals (**Fig. 6, col. 18, lines 9-40**), and converting the demodulated signals to Ethernet signals (“...the RF packets can be formatted as Ethernet packets.” **Fig. 6, col. 18; lines 41-52)**

Farmer further discloses an optical network terminal (ONT) coupled to the SWRD for converting the Ethernet signals to optical signals (“.. a digital optical transmitter that converts upstream data packet and RF packet electrical signals into the optical domain.” **Please see Fig. 6, col.17, lines28-31**), and for transmitting the optical signals to a headend facility via optical fiber (“..the optical signals can be transmitted back to the data service hub”; **see Fig. 6, col.16, lines 53-57**); and

Farmer also discloses a downstream modulator located in the headend facility (“The data service hub can comprise one or more modulators...” **col.10, lines 6-8 and Fig. 3)** for receiving the optical signals(“Upstream optical received from ... can convert

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the upstream optical signals into the electrical domain.” **Fig. 3, col.11, lines 59-65)** and for sending the forward signals (**Fig. 3, col.10, lines 15-24**), but Farmer fails to disclose the downstream modulator having an identification number that is inserted into the forward signals and the reverse RF signals including header information and payload data.

In an analogous art directed toward a similar problem namely improving the results from downstream signal. In Fig. 2; Logston discloses “the downstream modulator” [124] locates in headend [112] under provisioning of CMC [40] which determines if there are resources available for transporting the requested services and, if so, establishes a service connection from the SP 20 to the STT 30. The CMC 40 then sends the service information to both the STT 30 and the SP 20 to allow them to connect to the network and begin the requested interactive information service (**col. 6 lines 43-60**). Therefore; it would have been obvious to one having ordinary skill in the art to understand the downstream modulator must have “an identification number that is inserted into the QPSK forward signals”; **please see Fig.2, col.8, lines 27-39 and see col. 19, line 19- col. 21 line 2**). In essence, the identification of the headend also acts to identify the modulator. Also, Logston discloses the reverse RF signals including header information and payload data.(“ a message cell format...has a 40 bit message cell header and a 384 bit message payload area.” **Logston: col.14 lines38-46 and Fig.5A, 5B and 5C**). Logston further discloses wherein the at least one DHCT inserts the received modulator identification number in the reverse header information, and wherein the SWRD converts the modulator identification number into an Internet

Protocol address (**see Farmer Fig. 6, col. 18; lines 41-52 above**) indicative of the modulator identification number (**see Logston ;col.19, lines 18-62 and Fig. 5**).

In light of Logston, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify RF reversed signal with downstream modulator for having an identification number that is inserted into the forward signals, modifying the header information and payload data as taught by Logston, in order to provide a development of an interactive information service to bring the digital revolution into the home.

**Regarding to claim 2:** Farmer discloses the FTTH system of claim 1 above, with the SWRD comprising:

a duplex filter coupled for filtering forward signals and the reverse RF signals;  
(col.18, lines 2-9 and Fig. 7 block 507))

an upstream demodulator coupled to the duplex filter for demodulating the reverse RF signals;( col. 4, lines 5-25)

a microprocessor for converting the demodulated signals to Ethernet signals  
(col. 17, lines 42-65 and Fig. 7 block 550); and

a switch for receiving the Ethernet signals and any additional signals from a second source, the switch for combining the signals and for providing a combined signal to the ONT.(col. 3, lines 34-40 and col. 18 line 63 to col.19, line 2 and Fig. 7 block 513).

**Regarding to claim 3:** Farmer discloses the FTTH system of claim 2, wherein the SWRD converts the identification number into the Internet Protocol number via the microprocessor. (col.17, lines 39-54)

**Regarding to claim 4:** Farmer discloses the FTTH system of claim 1, wherein the ONT (see Fig.7 block 515, 520, 530, 540 and 525) receives the forward signals, wherein the forward signals comprise at least one of a telephone signal, Ethernet signals, data signals, and audio/video signals, ( col.16 lines 37-40 and Fig. 7) and wherein the ONT provides the at least one of Ethernet signals, data signals, and audio/video signals to the SWRD and provides the telephone signals to a connected telephone. (**col.17, lines 39-54 and Fig. 7 block 555, 560 and 550**).

**Regarding to claim 5:** Farmer further discloses a method for transmitting reverse signals in a fiber-to-the-home (FTTH) network, the FTTH network including a forward path and a reverse path, the method comprising the steps of:

generating a reverse RF modulated signal including header information in a digital communications terminal (DHCT); (please see **Farmer; Fig. 12 steps 1200-1270, col. 22 line 49 to col. 23 line 42**)

providing the reverse RF modulated signal via coaxial cable to a single wire return device (SWRD); (**col.24, lines 47-57 and Fig.13**)

demodulating the reverse RF modulated signal to provide a reverse demodulated signal; (**col.23, line 47 to col.24 line 25 and Fig.13**)

processing the reverse demodulated signal to provide a reverse Ethernet signal; (**col.18 lines 41-52 and col.19 lines 41-43, Fig. 7 block 407**)

converting the reverse Ethernet signal to a reverse optical signal in an optical network terminal (ONT); (**col.23, lines 14-18, and Fig.12 step 1230, 1235**); and

receiving the reverse optical signal at a downstream modulator located in a

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headend facility, **(col. 23, lines 16-46 and Fig. 12 steps 1240, 1245, 1250, and 1260)**

However, Farmer fails to disclose a corresponding downstream modulator identification number in header information wherein the downstream modulator transmits a forward signal in response to the received reverse optical signal.

Logston; the same field endeavor; discloses a corresponding downstream modulator identification number in header information (**Logston; Figs. 5A, 5B, 5C col. 14 lines 38-67**); wherein “the forward signaling path between the service provider (SP) and Set Top Terminal (STT) is provided via CMC on Ethernet to QPSK modulator...The forward path electrical signal output by QPSK modulator is provided to RF combiner along with video signals...” (**Logston; col. 8 lines 27-44 and Fig. 2 blocks 108, 112, 124 and 128**). Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify RF reversed signal of Farmer with the downstream modulator in the headend wherein transmits a forward signal contains the downstream modulator identification number as taught by Logston in response to the received reverse optical signal in order to provide interactive information service to bring the digital revolution to the home.

**Regarding to claim 6:** The FTTH system of claim 5,-wherein the DHCT stores the identification number and inserts the received identification number into the reverse header information prior to transmitting to the SWRD. (**Logston; Figs. 5A, 5B, 5C col.19 lines 22-61 and Fig. 10, col. 19 line 62 to col. 20 line 61**).



**Regarding to claim 7:** Logston further discloses the FTTH system of claim 6, wherein the SWRD converts the identification number into an Internet Protocol address that is indicative of the identification number. (**Logston; col.19 lines 44-61 and Figs. 5A, 5B, 5C**).

**Regarding to claim 8.** Farmer also teaches the FTTH system of claim 5, the method comprising the further steps of:

receiving the forward signals at the ONT, wherein the forward signals comprise at least one of a telephone signal, Ethernet signals, data signals, and audio/video signals, and wherein the ONT provides the at least one of Ethernet signals, data signals, and audio/video signals to the SWRD and provides the telephone signals to a connected telephone. (**Farmer : col.16, lines 37-60 and Fig. 7**).

### ***Response to Arguments***

Applicant's arguments filed January 31, 2008, have been fully considered but they are not persuasive.

1. Claim 1 is not amended as pointed out by applicant. (Remark, page 1, line 12).

2. Applicant argues" Farmer does not teach or discuss including a demodulator at each subscriber's premises; therefore, there is no requirement for including a corresponding downstream modulator address along with the reduced RF reverse signals"; see Remark, page 1, lines 25-27); Examiner disagrees because claim 1 that does NOT recite "a corresponding downstream modulator address along with the reduced RF reverse signals".

3.Applicant also points out: "Logston (FIG. 2, demodulators 122), demodulation occurs in the headend not at a subscriber's

premises. As illustrated, the demodulators 122 receive reverse signals from the DHCTs. The demodulators 122 are then coupled to an appropriate modulator 124 that modulates any downstream signals"; Remark, page 1, lines 25-27) Examiner disagrees because claim 1 that does NOT recite that contains demodulator at DHCT.

3. Applicant argues: "Logston also does not have a requirement for including an identification number, or address, of a particular downstream modulator in the communication messages": see Remark, page 2, lines 1-2).

In response, Examiner respectfully disagrees because Logston inherently discloses: "the downstream modulator [124] locates inside headend [112] along with CMC [40] which has an identification number that is inserted into the forward signals as IPA in a Boot Terminal Protocol (BOOTTERM) payload (**please see Figs. 2, 5 and 10, col.19, line 31 to col. 21 line 2**) as network address to be identified at subscriber's premises STT [30] (**Fig. 10, col.19, line 65 to col. 20 line 4**). It is well known in the art at the time of the invention to understand at subscriber's premises that set-top box has demodulator to detect data information from service provider as headend.

With above disagreements; examiner will maintain the same rejection to make final with providing updated rejection.

### ***Conclusion***

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN LUONG whose telephone number is (571)270-5091. The examiner can normally be reached on Mon.-Thurs., 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Beliveau can be reached on (571) 272-7343. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALAN LUONG/  
Examiner, Art Unit 2623

/Scott Beliveau/  
Supervisory Patent Examiner, Art Unit 2623